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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,756	03/26/2004	Ying Hu	oracle01.028	9081

56212 7590 07/02/2008
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EXAMINER	
AHLUWALIA, NAVNEET K	

ART UNIT	PAPER NUMBER
2166	

NOTIFICATION DATE	DELIVERY MODE
07/02/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/810,756	HU ET AL.	
	Examiner	Art Unit	
	NAVNEET K. AHLUWALIA	2166	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27,29-36 and 38-47* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27,29-36 and 38-47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In view of the Pre-Brief Appeal conference request filed on 03/04/2008, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

2. If an appellant wishes to reinstate an appeal after prosecution is reopened, appellant must file a new notice of appeal in compliance with 37 CFR 41.31and a complete new appeal brief in compliance with 37 CFR 41.37. Any previously paid appeal fees set forth in 37 CFR 41.20 for filing a notice of appeal, filing an appeal brief, and requesting an oral hearing (if applicable) will be applied to the new appeal on the same application as long as a final Board decision has not been made on the prior appeal. If, however, the appeal fees have increased since they were previously paid, then appellant must pay the difference between the current fee(s) and the amount previously paid. Appellant must file a complete new appeal brief in compliance with the format and content requirements of 37 CFR 41.37(c) within two months from the date of filing the new notice of appeal. See MPEP § 1205.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 36 – 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Regarding claim 36, the phrase "such" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1 – 27, 29 – 35 and 44 – 47 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

8. Claim 1 recites claiming a database management system but no hardware is recited as a part of the claim as being used. This recitation of the claim makes it software per se.

9. Claims 22 and 44 recite claiming a bitmap value which is a number, this does not fall under statutory subject categories.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 – 27, 29 – 36 and 38 – 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Elie Ouzi Koskas ('Koskas' herein after) (US 6,633,883 B2).

With respect to claim 1.

Koskas discloses a database management system having the improvement comprising: bitmap values, a bitmap value having a representation of a bitstring wherein set bits specify a set of objects whose definitions are built into the database management system, bitmap operations provided by the database system, a bitmap operation having user specified operands which are bitmap values and/or set of objects (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 2.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: a set-to-bitmap operation wherein a bitmap value is derived from a set of the objects specified in an operand (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 3.

Koskas discloses the database management system set forth in claim 2 wherein: the derived bitmap value is a new bitmap value that specifies the objects in the specified

set (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 4.

Koskas discloses the database management system set forth in claim 2 wherein: the derived bitmap value is a preexisting bitmap value which now further specifies the objects in the specified set (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 5.

Koskas discloses the database management system set forth in claim 2 wherein: the derived bitmap value is a preexisting bitmap value which now no longer specifies any objects in the specified set (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 6.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: a bitmap-to-set operation wherein the set of objects specified in a bitmap value specified in an operand is derived from the specified bitmap value (column 10 lines 46 – 67, column 11 lines 22 – 50 and column 13 lines 60 – 65).

With respect to claim 7.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: a bitmap-to-count operation wherein the

number of the objects in the set specified in a bitmap value specified in an operand is derived from the specified bitmap value (column 10 lines 49 – 67 and column 11 lines 1 – 20).

With respect to claim 8.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: an existence operation wherein a value representing the logical value TRUE is returned when a object specified in an operand belongs to the set of the objects represented by a bitmap value specified in another operand (column 11 lines 1 – 50).

With respect to claim 9.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: a logical operation on a first bitstring from a first bitmap value and a second bitstring from a second bitmap value specified in another operand (column 11 lines 1 – 50).

With respect to claim 10.

Koskas discloses the database management system set forth in claim 1 wherein the bitmap operations comprise at least: a comparison operation on a first bitmap value specified in an operand and a second bitmap value specified in another operand wherein a value representing the logical value TRUE is returned when the first bitmap

value and the second bitmap value specify the same set of objects (column 11 lines 1 – 50).

With respect to claim 11.

Koskas discloses the database management system set forth in claim 1 wherein: the bitmap values include settable bitmap values; and the bitmap operations comprise at least an assignment operation which sets a target settable bitmap value specified in an operand from a source bitmap value specified in another operand (column 10 lines 49 – 67 and column 11 lines 1 – 50).

With respect to claim 12.

Koskas discloses the database management system set forth in claim 1 wherein: the bitmap values include bitmap values that are persistent in the database management system (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 13.

Koskas discloses the database management system set forth in claim 12 wherein: the persistent bitmap values include bitmap values in user-specified fields of tables of the database management system (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 14.

Koskas discloses the database management system set forth in claim 1 wherein: the bitstring in the bitmap value is compressed (column 15 lines 7 – 15).

With respect to claim 15.

Koskas discloses the database management system set forth in claim 1 wherein: the objects are identifiers for other objects that exist in the database management system (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 16.

Koskas discloses the database management system set forth in claim 15 wherein: the identifiers for the other objects are row identifiers of rows in the database management system (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 17.

Koskas discloses the database management system set forth in claim 16 wherein: the row identifiers are row identifiers returned by a user-defined query executed in the database management system (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 18.

Koskas discloses the database management system set forth in claim 17 wherein: the query returns a row identifier when a field in the row has an attribute specified in the query, whereby the bitmap value represents the set of fields having the specified attribute (column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 19.

Koskas discloses the database management system set forth in claim 1 wherein: the objects are identifiers for other objects that exist outside the database management system (column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 20.

Koskas discloses the database management system set forth in claim 19 wherein: the identifiers for objects that exist outside the database management system are electronic product codes for product items (column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 21.

Koskas discloses the data storage device, the data storage device being characterized in that: the data storage device contains code which, when executed in a

computer system, implements the database management system set forth in claim 1 (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 22.

Koskas discloses the bitmap value employed in a database management system, the bitmap value representing a first subset of a second subset of objects that are defined in the database management system and the bitmap value comprising: a mapping specifier that maps a string of bits to the second subset; and a representation of the string of bits wherein a bit is set in the represented string of bits when the member of the second subset that is mapped to the bit belongs to the first subset and database management system providing at least a first operation which permit users of the database system to specify the mapping of the string of buts to the second subset and a second operation which permits users to directly specify setting bits of the string of bits that correspond to the first subset (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 23.

Koskas discloses the bitmap value set forth in claim 22 wherein: the second set is ordered (column 11 lines 1 – 20).

With respect to claim 24.

Koskas discloses the bitmap value set forth in claim 23 wherein: the order of the objects corresponds to values of the objects; the mapping specifier specifies the mapping by specifying one or more ranges of the values of the objects to which the string of bits is mapped; and the representation of the string of bits represents strings of bits corresponding to the ranges (column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 25.

Koskas discloses the bitmap value set forth in claim 24 wherein: the mapping specifier specifies the range of the values by specifying a start value and an end value (Figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 46 – 67).

With respect to claim 26.

Koskas discloses the bitmap value set forth in claim 24 wherein: the values include a prefix which determines a range of the values; and the mapping specifier specifies the range of the values by specifying the prefix for the range (Figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 46 – 67).

With respect to claim 27.

Koskas discloses the bitmap value set forth in claim 26 wherein: the mapping specifier further specifies the range of the values by using a start value and an end value to specify one or more subranges of the range specified by the prefix (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 29.

Koskas discloses the bitmap value set forth in claim 28 wherein: the objects are electronic product codes (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 30.

Koskas discloses the bitmap value set forth in claim 22 wherein: there is a plurality of the bitmap values in the database management system; and certain of the bitmap values are persistent in the database management system (column 10 lines 46 – 67, column 11 lines 22 – 50 and column 13 lines 60 – 65).

With respect to claim 31.

Koskas discloses the bitmap values set forth in claim 30 wherein: the persistent bitmap values include bitmap values in user-specified fields of tables of the database management system (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 32.

Koskas discloses the bitmap value set forth in claim 22 wherein: the representation of the bitstring is a compressed representation thereof (column 15 lines 7 – 15).

With respect to claim 33.

Koskas discloses the bitmap value set forth in claim 22 wherein: there is a plurality of the bitmap values in the database management system; and the database management system provides further bitmap operations on the bitmap values (column 10 lines 46 – 67, column 11 lines 22 – 50 and column 13 lines 60 – 65).

With respect to claim 34.

Koskas discloses the bitmap value set forth in claim 33 wherein: certain of the bitmap operations alter the range specifier and the representation of the bitstring as required to map the represented string of bits to a second subset of the second set that is required for the operation (column 10 lines 46 – 67, column 11 lines 22 – 50 and column 13 lines 60 – 65).

With respect to claim 35.

Koskas discloses the data storage device, the data storage device being characterized in that: the data storage device contains code which, when executed in a computer system, implements the bitmap value set forth in claim 22 (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 36.

Koskas discloses the method employed in a database system of making a bitmap value that represents a first subset of a second subset of objects that are defined in the database management system, the method comprising the steps

performed in the database system of: performing a first operation provided by the database system to users of the system, the first operation mapping a bitstring that is represented in the bitmap value onto the second subset and performing a second such operation, the second operation setting the bits in the bitstring that correspond to the first subset (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 38.

Koskas discloses the method set forth in claim 37 wherein: the objects are electronic product codes (column 10 lines 46 – 67 and column 11 lines 22 – 50).

With respect to claim 39.

Koskas discloses the method set forth in claim 36 wherein the objects are ordered and the step performing the first operation comprises the steps of: making a range specifier that specifies a range of the objects; and mapping the bits in the bitstring to the specified range (column 10 lines 46 – 67, column 11 lines 22 – 50 and column 13 lines 60 – 65).

With respect to claim 40.

Koskas discloses the method set forth in claim 39 wherein the step of making a range specifier includes the step of: making a start value and an end value which together specify the range (column 11 lines 1 – 50).

With respect to claim 41.

Koskas discloses the method set forth in claim 39 wherein the step of making a range specifier includes the step of making a prefix value which specifies the range.

With respect to claim 42.

Koskas discloses the method set forth in claim 36 further comprising the step of: compressing the bitstring (column 15 lines 7 – 15).

With respect to claim 43.

Koskas discloses the data storage device, the data storage device being characterized in that: the data storage device contains code which, when executed in a computer system, implements the method set forth in claim 36 (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 44.

Koskas discloses the bitmap value employed in a database management system to represent a first subset of the row identifiers defined in the database management system, the bitmap value comprising: a mapping specifier that maps a string of bits to a second subset of the set of row identifiers, the second subset including the first subset; and a representation of the string of bits wherein a bit is set in the represented string of bits when the member of the second subset that is mapped to the bit corresponds to a

member of the first subset, the database management system providing at least a first operation which permits users of the database system to directly specify the mapping of the string of bits to the second subset and a second operation that permits users of the database system to directly specify setting bits of the string of bits that correspond to the first subset; and the first subset is returned by a user-defined query executed by the database management system (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

With respect to claim 45.

Koskas discloses the bitmap value set forth in claim 44 wherein: the first operation dynamically alters the mapping specifier such that the string of bits is mapped to a second subset includes the first subset (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 46.

Koskas discloses the bitmap value set forth in claim 44 wherein: the first subset is returned by a query which returns a row identifier when a field identified by the row identifier has an attribute specified in the query, whereby the bitmap value represents the set of fields whose values have the specified attribute (figures 10 A-H, column 9 lines 26 – 34 and column 10 lines 49 – 67).

With respect to claim 47.

Koskas discloses the data storage device, the data storage device being characterized in that: the data storage device contains code which, when executed in a computer system, implements the method set forth in claim 44 (Figures 10 A-H, column 9 lines 26 – 34, column 10 lines 46 – 67 and column 11 lines 1 – 20).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Navneet K. Ahluwalia whose telephone number is 571-272-5636.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alam T. Hosain can be reached on 571-272-3978. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Navneet K. Ahluwalia/
Examiner, Art Unit 2166

Dated: 06/25/2008

/Hosain T Alam/
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